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Final Environmental Impact Statement Pressure Sensitive Tape and Label Surface Coating Industry: Background Information for Promulgated Standards

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16. ABSTRACT

Standards of performance for the control of emissions from pressure sensitive tape and label surface coating operations are being promulgated under the authority of Section 111 of the Clean Air Act. These standards apply to pressure sensitive tape and label coating lines which emit more than 45 Mg (50 tons) of volatile organic compounds (VOC) per year and for which construction or modification began on or after the date of proposal of the regulations. This document provides a final environmental impact statement and a discussion of changes made to the standards after proposal as a result of public comments.

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Emission Standards and Engineering Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

September 1983

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ENVIRONMENTAL PROTECTION AGENCY

Background Information and Final
Environmental Impact Statement
for Pressure Sensitive Tape and Label
Surface Coating Industry

Prepared by:

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(Date)

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1. The promulgated standards of performance will limit emissions of volatile organic compounds (VOC) from new, modified, and reconstructed pressure sensitive tape and label coating lines. Section 111 of the Clean Air Act (42 U.S.C. 7411), as amended, directs the Administrator to establish standards of performance for any category of new stationary source of air pollution that ". . . causes or contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare." The northeastern and north central regions of the country would be particularly affected by the promulgated standard.

2. Copies of this document have been sent to the Department of Labor; Department of Agriculture; Department of Commerce; Office of Management and Budget; Council of Environmental Quality; members of the State and Territorial Air Pollution Program Administrators, and the Association of Local Air Pollution Control Officials; EPA Regional Administrators; and other interested parties.

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Chapter 1
SUMMARY

On December 30, 1980, the Environmental Protection Agency (EPA) proposed standards of performance for Pressure Sensitive Tape and Label (PSTL) Surface Coating Operations (45 FR 86278) under authority of Section 111 of the Clean Air Act. Also, a draft Environmental Impact Statement (EIS) was published in a background information document (BID) entitled, Pressure Sensitive Tape and Label Surface Coating Industry - Background Information for Proposed Standards (EPA 450/3-80-003a). Public comments were requested on the proposal in the Federal Register. There were ten commenters representing the PSTL industry. Comments were also received from the State of Ohio and two United States senators. In addition to written comments, a public hearing was held on January 30, 1981.

This BID supports promulgation of the Federal New Source Performance Standards (NSPS) for limiting volatile organic compound (VOC) vapor emissions from PSTL coating lines. This document provides a final EIS and a discussion of changes made after proposal resulting from public comments. Chapter 1 presents a summary of the changes made to the regulation between proposal and promulgation with resulting impacts. Chapter 2 contains a summary of all comments and EPA responses to the comments.

1.1 SUMMARY OF CHANGES SINCE PROPOSAL

The requirements of the pressure sensitive tape and label regulation have not substantially changed since proposal. The most important change made to the standard involved broadening the proposed affected facility definition. Other important changes involved: broadening the small solvent use exemption limit, modifying two compliance equations to correctly use the data which Reference Method 24 produces, revising a performance test requirement for incinerator-controlled facilities, and reducing the

reporting requirements of the standard. Minor word changes were also made in several miscellaneous items. The substantive changes are discussed in greater detail in the succeeding paragraphs.

1.1.1 Affected Facility Definition. The proposed standard defined affected facility as each individual coating operation located within a PSTL coating line. Industry sources indicated that under this definition as many as three affected facilities could be contained within a single coating line. After careful consideration of the public comments on this issue, the Administrator determined that the affected facility definition should be amended in the promulgated standard to encompass the entire coating line, including all individual coating heads and drying ovens on one line, from unwind to wind. The term "coating line" was redefined to include all adhesive, release, and precoat coating operations located between a web unwind station and a web rewind station on a single coating line. For clarity the term "precoat" was also redefined to include all coating operations in which a coating other than an adhesive or release is applied.

An analysis of the points raised in the comments on this issue and of new data submitted by the industry revealed that the conclusion that the proposed narrow definition would result in greater emissions reduction was not presently supportable. These new data showed that the relative cost of low-solvent technologies has changed since the BID was prepared and that new low-solvent adhesive systems are now more costly than comparable solvent-based adhesive systems which are now in use.

Consequently, the narrow definition, which has the effect of imposing the additional cost of precoat controls on new or modified lines which use low-solvent adhesive technologies, would encourage continued use of existing solvent-based adhesive facilities and discourage the construction of new low-solvent facilities. In contrast, under the broad definition, precoat facilities would not need to be controlled if the emissions from the complete line are below the standard. This results in a significant cost savings and creates an incentive for the construction of new, low-solvent adhesive facilities. New lines involving low-solvent facilities would have

significantly lower emission rates that existing solvent-based lines, and equal or lower emission rates than new solvent-based lines. In view of the cost incentive for the construction of new low-solvent lines, it was reasonable to conclude that the broad definition will result in greater emission reduction than the narrow definition. For this reason the Administrator decided to adopt the broad definition in the promulgated standard.

1.1.2 Small Solvent Use Exemption Limit. Based on a reanalysis of VOC control costs, the small solvent use exemption limit has been broadened to exclude from compliance with the standard's emission limits, any coating line which inputs to the coating process 45 Mg (50 tons) of VOC or less per 12 month period. The 125 kg VOC daily and 15 Mg VOC annual limits have been deleted. Although new or modified coating lines which input 45 Mg (50 tons) of VOC or less per 12 month period are not subject to the emission limits, they are affected facilities under the standard and as such are subject to applicable recordkeeping and reporting requirements.

1.1.3 Compliance Equations. The two equations in the standard which use the data resulting from the application of Reference Method 24 were changed. The changes were required because the proposed standard did not use the correct variables to represent the data that Reference Method 24 gives. Reference Method 24 gives the weight fraction of organics and the weight fraction of solids of a particular coating. Variables representing these quantities were added to the standard. These new variables replace values (in the proposed standard) that are not obtainable from Reference Method 24. The deleted variables represented the mass of VOC per mass of solids in a coating and the mass of coating solids in a coating. The changes made in the equations' variables have no effect on the results achievable from the equations.

1.1.4 Performance Test Requirements. In the final regulation the performance test for incinerator-controlled affected facilities has been

slightly modified in the way that the average VOC content per unit mass of solids is determined. In the promulgated standard, the performance test for incinerator-controlled affected facilities will still require three one hour test runs. The VOC content (and consequently the required level of emission reduction) will be determined by testing the coatings (with Reference Method 24) that will be used at the affected facility during each one hour test. This approach differs from the proposed standard in that the proposed standard required that a monthly average VOC content be determined based on all coatings used at the affected facility in the month prior to the performance test. The revised method in the final rule is more reasonable because it will be a more representative and direct measurement of the emission reduction capabilities of the emission control system.

1.1.5 Reduction of Reporting Requirements. In the proposed standard owners and operators of an affected facility were required to report to the Administrator any exceedances of the allowable VOC emission limit and incinerator temperature fluctuations established in the standard. These reports were required to be submitted within 10 days following the end of the calendar month in which the exceedance occurred. In the promulgated standard the same exceedance reports are required; however, the owner or operator is only required to submit the reports semiannually. If no exceedances occur during a year, the owner or operator is not required to submit these reports. The change in the required frequency of reporting in no way affects an owner or operator's recordkeeping requirements. Facilities will still be required to maintain records for two years to indicate proper operation and maintenance of control equipment and compliance with the standard. EPA has the authority to inspect these records at any time to check compliance with the standard. Upon inspection of facility records, the Administrator can request an additional performance test.

1.1.6 Miscellaneous Revision. The term "VOC" is not explicitly defined in the promulgated regulation as it had been in the proposed rule. In the promulgated regulation "VOC" is simply defined as meaning "volatile

organic compounds". No detailed definition was required in the promulgated regulation because a definition of "volatile organic compounds" has already been promulgated with the Automobile and Light-Duty Truck Surface Coating NSPS (45 FR 85410, December 24, 1980).

For the promulgated regulation, the specifications on sample size for the use of Reference Method 24 were slightly modified from those presented in the proposed rule. In the promulgated version it is stated that, "for Reference Method 24, the coating sample must be a one liter sample taken into a one liter container at a point where the sample will be representative of the coating applied to the web substrate." The proposed regulation only required that a one liter sample be taken with no specifications made on container size.

1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

1.2.1 Alternatives to Promulgated Action. The regulatory alternatives are discussed in Chapter 6 of the proposal BID. These regulatory alternatives reflect the different levels of emission control from which one is selected that represents the best demonstrated technology, considering costs, nonair quality health, and environmental and economic impacts for pressure sensitive tape and label surface coating operations. These alternatives remain the same.

1.2.2 Environmental Impacts of Promulgated Action. The changes in the regulation as described in Section 1.1 above will have no effect on the environmental impacts ascribed to the standard as originally proposed. These impacts are described in Chapter 7 of the proposal BID. That analysis of environmental impacts now becomes the final Environmental Impact Statement (EIS) for the promulgated standards.

1.2.3 Energy and Economic Impacts of Promulgated Action. The energy impacts of the standards are described in Section 7.4 of the proposal BID. The changes made in the standards since proposal have no effect on these impacts.

The economic impacts of the proposed standards are discussed in Chapter 8 of the proposal BID. The broadening of the affected facility definition, in the promulgated standards, may reduce the reporting and recordkeeping costs incurred by the PSTL industry. However, the economic impacts of the promulgated standards are expected to remain essentially as presented in the proposal BID.

1.2.4 Other Considerations

1.2.4.1 Irreversible and Irretrievable Commitment of Resources. Chapter 7 of the proposal BID concludes that other than fuels required for steam and electricity generation and the materials required for construction of the system, there is no apparent irreversible or irretrievable commitment of resources associated with the construction or operation of the control systems. This remains unchanged since proposal.

1.2.4.2 Environmental and Energy Impacts of Delayed Standards. Table 1-1 in the proposal BID summarizes the environmental and energy impacts associated with delaying promulgation of the standard. Delayed promulgation would mean affected facilities would be controlled to the State Implementation Plan (SIP) level. This is the control level used as the baseline alternative in the model plant analyses. These impacts remain unchanged since proposal.

1.2.4.3 Urban and Community Impacts. Chapter 8 of the proposal BID discusses potential socioeconomic impacts. There have been no changes in the urban or community impacts since proposal of the standards.

Chapter 2
SUMMARY OF PUBLIC COMMENTS

The list of commenters, their affiliation, and the Environmental Protection Agency (EPA) docket number of each of the comments are shown in Table 2-1. In addition to comments made at the public hearing, fourteen letters commenting on the proposed standard were received. The comments have been combined into the following nine categories:

2.1 General
2.2 Emission Control Technology
2.3 Modification and Reconstruction
2.4 Economic Impact
2.5 Affected Facility Definition
2.6 Reporting and Recordkeeping
2.7 Small Source Exemption
2.8 Level of Proposed Standard
2.9 NSPS and State Implementation Plan (SIP) Coordination

The comments and responses are discussed in the following sections of this chapter. A summary of changes made in the regulation is included in Chapter 1. The docket reference is indicated in parentheses in each comment. Unless otherwise noted, all docket references are part of Docket Number A-79-38, Category IV.

2.1 GENERAL

2.1.1 Comment: One commenter (D-11) made several points concerning different aspects of hot melt coating. This commenter pointed out that in Europe the slot-die type hot melt coater discussed in the BID is being almost completely replaced by roll coating of hot melts. Hot melt roll coaters eliminate many of the operational and product quality problems associated with slot-die type coaters. The elimination of these problems will make hot melt coating applicable to more PSTL products.

TABLE 2-1

List of Commenters on the Proposed Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

Docket Number A-79-38, IV

Public Hearing

Commenter	Docket Reference
Mr. John Quarles Morgan, Lewis, & Bockius 1800 M Street, N.W. Washington, D. C. 20036	F-1
Mr. Alonzo Moore Anchor Continental, Inc. 2000 South Beltline Boulevard Columbia, South Carolina 29250	F-1

Letters

Mr. S. F. Straus W. H. Brady Company 727 West Glendale Avenue Milwaukee, Wisconsin 53201	D-1
Mr. Jerald A. Jacobs and Mr. Richard F. Mann Leighton, Conklin, Lemov, Jacobs, and Buckley 2033 M. Street, N.W. Washington, D. C. 20036	D-2
Senator Ernest F. Hollings 115 Senate Office Building Washington, D. C. 20510	D-3
Mr. W. Radoslovich Le Page's Incorporated Papercraft Park Pittsburgh, Pennsylvania 15238	D-4

Commenter	Docket Reference
Mr. Patrick J. Dirk Kroy Industries, Inc. 1728 Gervais Avenue St. Paul, Minnesota 55164	D-5
Mr. Charles R. North Avery International 250 Chester Street Painesville, Ohio 44077	D-6
Mr. Max L. Ostrow DAP Incorporated Post Office Box 277 Dayton, Ohio 45401	D-7
Mr. John Quarles Morgan, Lewis, & Bockius 1800 M. Street, N.W. Washington, D. C. 20036	D-8
Mr. Edwin W. Oldham Morgan Adhesives Company 4560 Darrow Road Stow, Ohio 44224	D-9, D-12
Mr. K. A. Walanski DeSoto, Inc. 1700 South Mount Prospect Road Des Plaines, Illinois 60018	D-10
Mr. Wolfram Aurin Pacon Machines Corporation 51 Signal Hill Road Madison, Connecticut 06443	D-11
Mr. James F. McAvoy State of Ohio Environmental Protection Agency 361 East Broad Street Columbus, Ohio 43216	D-13
Senator Jesse Helms 4213 Dirkson Senate Building Washington, D. C. 20510	D-14

Commenter D-11 went on to state that for the case of 100 percent solids silicone release coating, nip-fed smooth roll coaters are replacing the gravure-type coater discussed in the BID. In Europe these nip-fed roll systems are being used because of the following advantages: no foaming at high speeds, no filling of gravure cells with hardened silicone, and no frequent replacement of gravure rolls. The commenter stated that the in-line tandem coating of a hot melt adhesive and a 100 percent solids silicone release would be the most economical way to produce pressure sensitive adhesive label stock.

Response: At the time EPA developed the process description for hot melt adhesive and 100 percent solids silicone release coating, slot-die type and gravure type coaters, respectively, were the predominant methods of application for these coatings in the United States. Coating equipment vendors outside of the U. S. were not contacted. Although EPA does strive to make the BID as current as possible, not all of the latest technological developments in the tape and label industry can be included. The Administrator welcomes the submission of such updated industry information and feels these developments in coating application methods will aid in EPA's attempts to reduce volatile organic compound (VOC) emissions from the PSTL surface coating industry. The Administrator acknowledges that the totally solvent-free coating line configuration proposed in the commenter's letter would represent a significant achievement in VOC emissions reduction from the PSTL industry. In this regard, the proposed standards may encourage or would not adversely affect the use of such technology.

2.1.2 Comment: A manufacturer (D-10) of surface coatings commented on the treatment of radiation-cured coatings in the proposed standard. The commenter stated that radiation-cured coatings emit essentially no VOC and may be considered "in a classical sense" 100 percent solids coatings. The commenter objected to the analytical methods proposed to measure the existence and level of VOC in surface coatings. This analytical method (Reference Method 24) uses a thermal bake procedure to evaporate the

volatiles and then determine the volatile content based on weight loss of the sample. With radiation-cured coatings this procedure would cause non-VOC coating solids constituents to volatilize. Based on a weight loss examination, the radiation-cured coating would appear to contain significant VOC. The commenter felt that the Administrator should either exempt radiation-cured coatings from the standard or permit an alternative analytical test method to be used in place of Reference Method 24 for determining the VOC content of such coatings.

Response: This commenter (D-10) was contacted directly (E-3 and E-4) to clarify what type of alternative analytical test procedure he would recommend for radiation-cured coatings. It was learned from these conversations that the commenter is not actually connected with the pressure sensitive tape and label industry. His company does not supply any type of adhesive, release, or primer coatings to this industry. The commenter stated that the reference to surface coating in the title of the proposed standard initiated his company's comment letter. The commenter's company produces surface coatings for lithographic applications to paper products such as record jackets.

A specific exemption from the standard for radiation-cured coatings is not necessary. The fact that these coatings contain no VOC and are essentially 100 percent solids formulations would effectively allow them to fall below the 0.20 kg VOC/kg solids emission limit of the proposed standard, therefore, no additional control would be required. The affected industry made no comments on this subject or on the need for a different analytical test procedure prior to proposal of the regulation or during the public comment period.

2.1.3 Comment: One commenter (D-5) understood the proposed standard to say that the water content of coatings would be included as a VOC in determining whether the affected facility fell below the proposed lower emission cutoff of 15 megagrams of VOC per year.

Response: It appears that there was a misunderstanding on the part of the commenter regarding this question. The inclusion of water as VOC is not mentioned in the preamble or proposed standard and is clearly not intended. The proposed standard included the following, "any coating line which causes the discharge into the atmosphere of not more than 125 kg of VOC per day and 15 Mg of VOC (emphasis added) per year is not considered an affected facility and is not therefore subject to the emission limits of §60.442(a)." It should be noted that the 125 kg VOC and 15 Mg VOC lower emissions cutoff levels have been deleted and replaced by a single value of 45 Mg per year (see comment 2.7).

2.1.4 Comment: One commenter (D-6) objected to an analysis in the background information document that examined the additional fuel requirements of thermal incinerators operating at various lower explosive limit (LEL) levels. The commenter felt that the conclusion of the analysis was that no additional fuel would be required when the incinerator gases were maintained at 40 percent LEL or greater. The commenter's objection to this conclusion stemmed from a 1972 test of his own facility's incinerator. This test indicated that at LEL levels above 40 percent some additional fuel was required by the incinerator device.

Response: The comparison raised by the commenter's objection is not a valid one. The analysis presented in the BID was only a model case based on realistic information from similar incineration systems currently in use in the industry. The analysis was presented to make a point that the higher the LEL level in the incinerator gas stream, the less additional fuel would be required to operate the incinerator. The example calculations and numbers given in the BID were not intended to be used as absolute values nor were they presented as such. The model analysis was only intended to indicate a trend as the LEL was raised from 5 to 40 percent. No attempt was made to draw the general conclusion that systems at 40 percent LEL or greater no longer require any additional fuel.

The fact that the commenter's 1972 tests do not agree precisely with a model's example calculation is understandable. The conditions existing at the time of the commenter's test do not match the assumptions and conditions used in the BID analysis. In addition, an incinerator operating nine years ago may not have been as well-designed and efficiently operated as more current models.

2.1.5 Comment: Several commenters (D-1, D-3, D-13) believe that the proposed standard is unnecessary because strong economic incentives already exist for users of petroleum-based solvents to recover the maximum amount of solvent possible.

Response: In the view of the Administrator, economic incentives are an important consideration in a facility's attempts to recover solvent emissions, however, economic incentives alone are not strong enough to ensure that pressure sensitive tape and label facilities will use the best demonstrated technology. Section 111(a)(1) of the Clean Air Act Amendments of 1977, states that a standard of performance shall reflect the degree of emission limitation achievable through application of the best (emphasis added) technological system of continuous emission reduction. Several facilities examined during the development of the proposed standard used solvent recovery emission controls, however, these controls were not being optimally used to recover all the solvent emissions possible. Furthermore, some facilities examined did not deem it necessary to try to recover any solvent emissions.

The EPA is establishing an NSPS for pressure sensitive tape and label coating facilities because this industry is part of the industrial paper surface coating category which is ranked fourth on the "Priority List and Additions to the List of Categories of Stationary Sources" promulgated at 44 FR 49222 on August 21, 1979. This list for new source performance standards ranks emission sources in terms of quantities of air pollutant emissions, mobility and competitive nature of each source category, and the extent to which each pollutant endangers public health and welfare.

2.2 EMISSION CONTROL TECHNOLOGY

2.2.1 Comment: One commenter (D-4) stated that it has not been demonstrated that the proposed standards have been achieved using a hood capture system, except on a theoretical basis.

Response: The best system of continuous emission reduction in the PSTL industry was determined to consist of an emission control device operated in conjunction with a well-designed VOC capture system. High levels of emissions capture (particularly fugitive emissions capture) is an important consideration in an affected facility's attempts to comply with the proposed standards. At a source test conducted during the development of the proposed standards, the tested facility did use a hooding system to capture fugitive emissions around the coating area. The testing results indicated that the hooding system was doing a very good job of capturing fugitive solvent emissions. However, at this facility, instead of routing the captured fugitives back into the drying oven or control device, they were emitted directly to the atmosphere. For this reason a direct use of the captured emissions in computing the facility's overall VOC emission reduction was not possible. Calculations using the actual test data VOC concentrations and measured gas flow rates indicate that the level of the proposed standard would have been met had the facility ducted captured fugitive emissions to the drying oven or control device. Plant trips to other well-controlled facilities that use well-designed hooding systems confirmed that significant emissions capture can be achieved using hoods.

2.3 MODIFICATION AND RECONSTRUCTION

2.3.1 Comment: Three comments (D-2, D-4, D-12) were received concerning the definition and application of the terms "modification" and "reconstruction" in the proposed standard. One commenter stated in a letter (D-2) that there is no definition in the standard for these terms, and specifically questions whether the addition of a coating head or the normal replacement of spare parts would make a facility subject to the proposed standards. Another commenter stated that the interpretation of what is

allowed under the definitions of modified and reconstructed facilities is vague and subject to misinterpretation (D-4). The same commenter stated that these provisions would make the administration more difficult.

Response: There are definitions of the terms "modification" and "reconstruction" in the General Provisions section of the New Source Performance Standards regulations at 40 CFR 60.14 (modification) and 60.15 (reconstruction). These definitions are applicable to all new source standards, unless specifically amended in the standard for a particular source category. This proposed standard contains no amendment to these definitions.

The term "modification" applies to any operational or physical change in a facility which results in an increase in the emissions from the source of any pollutant regulated by the standard. However, in Section 60.14(e)(1) routine repair, replacement and maintenance are deemed not to be modifications under the regulation.

Whether a change to a facility constitutes a "reconstruction" is a case-by-case determination under 60.15. This determination is made by first looking at whether the capital cost of the replacements to an existing plant is greater than fifty percent of the capital costs of construction of a comparable new facility, then assessing whether it is technologically and economically feasible to meet the standards at the reconstructed facility.

Thus, the definitions of modification and reconstruction given in 40 CFR 60.14 and 60.15 give reasonably specific requirements which must be met in order to determine whether specific alterations to a facility would make the provisions of the proposed standard applicable to the facility. In addition, consideration was given to the effect of the application of these provisions to the pressure sensitive tape and label industry during the development of this standard. Changes in web width, in line speed, in scheduling efficiency, and in components of the manufacturing operation have been reviewed in Chapter 5 of the BID and the conditions under which they would or would not fall under the modification and reconstruction definitions discussed (see the preamble to these proposed standards for a summary of this discussion). These regulations, the discussion of this issue in the

BID, and the provisions in 60.15(b) for the determination by the Administrator as to the applicability of the reconstruction provision to specific facilities provides the certainty in application needed for operation under the standard.

Under these provisions, the normal replacement of spare parts would not be anticipated to constitute either a modification or a reconstruction, and therefore, would not trigger the imposition of the proposed standard. The addition of a coating head may constitute either a modification or a reconstruction, depending on the facts of the case. If the addition of the coating head resulted in an increase in emissions, this change would be a modification. If the addition of the coating head involved a capital expenditure greater than one half of the capital cost of a new facility, and it was technologically and economically feasible to meet the standard at the facility, the Administrator would determine that the change constituted a reconstruction and the facility would be considered an affected facility under the standard.

The difficulties with administration referred to were not detailed. However, it is assumed from the context of the comment that the major concern was with the costs of the manpower involved in the operation and maintenance of the control equipment and related monitoring, recordkeeping and reporting activities. In this regard, EPA has studied the costs which will be incurred in these activities. This analysis is contained in the preamble to the proposed standard at 45 FR 86288 and in the Reports Impact Analysis which is a part of the docket for this standard setting. Calculations of the effort which would be required in order to accomplish the reporting necessitated by the proposed standard reveal that for the first five years the industry would incur a manpower demand of twelve additional person-years. When viewed against the emission reductions projected for this industry as a result of the implementation of these regulations, this added administrative cost is considered to be reasonable.

2.3.2 Comment: One commenter stated that the conversion of coating facilities to waterborne technologies should not constitute a modification

or reconstruction of the facility, thereby triggering the requirements of the proposed standard (D-7).

Response: The conversion of a solvent-based coating system to a waterborne system would not, in and of itself, constitute a modification, since the use of the waterborne system would not ordinarily result in an increase in VOC emissions, but instead in a reduction in those emissions. Such a conversion might, however, constitute a reconstruction of the facility under the definition stated in 40 CFR 60.15 if the capital costs of the conversion exceeded fifty percent of the capital costs of a new facility.

Under the reconstruction provisions of the regulation, the Administrator makes a case by case determination as to whether an alteration to a facility constitutes a reconstruction for the purposes of the standard. Among the factors in this decision are the extent to which the components being replaced cause or contribute to the emissions from the facility, and the economic obstructions to compliance inherent in the proposed change in the plant.

2.3.3 Comment: In a comment directed toward the reconstruction and modification elements of the proposed standard, one commenter stated that the repair, updating, or modification of equipment should not cause the proposed standard to be applied to that facility (D-12). This commenter stated that application of the standard to such modifications would result in greater emissions since a less efficient coater station might be kept in service for a longer period of time in order to avoid imposition of the new source standard.

Response: As provided in 40 CFR 60.14(e)(1), the routine maintenance, repair and replacement of components of a facility would not constitute a modification for the purpose of triggering the requirements of the proposed standard. Such activities which are not routine would only be considered modifications if they resulted in an increase in the emissions from the

facility, or reconstructions if they resulted in capital expenditures greater than fifty percent of the capital cost of a new facility. It is true that the effect of the proposed standards could influence industry decisions to reconstruct existing facilities. However, it is consistent with the intent of the Clean Air Act that best technology (and its costs) should be considered when a decision to construct is made and capital committed. While it is possible that this could result in prolonging the use of older equipment, the energy savings and efficiency improvements in new technology are expected to be overriding considerations in this industry.

2.4 ECONOMIC IMPACT

2.4.1 Comment: The commenter (D-6) stated that assumptions used as the basis for the BID cost analysis were not consistent with current values. The comment specifically stated that the interest rate and the cost of silicone release coatings were incorrect. The commenter said that the BID silicone cost of $3.50/lb was correct only for silicone coatings that will dissolve in solvent. The cost for solventless (100 percent solid) silicone coatings is $7.15/lb.

Response: The cost analysis for the BID was developed in 1979 and is based on mid-1979 dollars. All assumptions used as the basis for the cost analysis reflect prices, interest rates, and labor rates existing in mid-1979. The cost analysis was performed once under a single set of assumptions and was not constantly revised as economic variables (such as interest rates) fluctuated nationwide. Economic multipliers are available which can approximately translate the mid-1979 numbers to mid-1981 numbers. The application of such a multiplier would yield values which are correct for mid-1981 economic conditions.

In the BID economic analysis costs were developed for solvent-based silicone release plants and for 100 percent solids silicone release plants. A coating raw material cost of $3.50/lb was used for both types of plants. A higher raw material cost of $7.15/lb for 100 percent solids silicone

coatings was not used. In view of this comment, the economic analysis was reexamined and the raw material cost for 100 percent solids silicone release facilities increased to $7.15/lb. The Administrator has determined that the use of the higher raw material cost ($7.15/lb) suggested by the commenter would not affect the overall conclusion of the economic analysis that the proposed standards are economically reasonable.

2.4.2 Comment: One commenter (D-7) stated that the proposed standard would result in additional costs to be passed on to consumers. These additional costs would have an inflationary impact on the United States economy.

Response: The economic analysis for the proposed standard examined two methods that affected firms could use to handle increased costs for emissions control. The two methods examined were full cost absorption (by the affected firm) and full cost pass-through (to the consumer). The economic analysis determined that even if full cost pass-through were instituted, a maximum product price increase of only 0.9 percent would result. This impact was considered by the economic analysis to be reasonable and noninflationary.

2.4.3 Comment: Several commenters (D-1, D-3, D-4, D-5, D-6, D-12, F-2) stated that the new source performance standard for the pressure sensitive tape and label industry should be based on the existing or newly proposed regulations which are incorporated into State Implementation Plans (SIPs). These requirements were identified during the development of the standard and were incorporated into Alternative I. Two commenters stated that this alternative should be adopted in lieu of the proposed standard because the amount of emissions reduction which would result from the proposed standard over that accomplished under the existing regulations is disproportional to the costs involved in achieving that additional reduction (D-1, D-3).

Response: EPA has made an analysis of the costs which would be incurred as a result of the adoption of Alternative III (the proposed standard) rather than Alternative I (the existing State regulations), and the relative benefit derived from each in terms of reduced emissions. These analyses are discussed in the preamble to the proposed regulation and in the BID at Chapters 7 and 8.

Under Alternative I emissions of VOC from pressure sensitive tape and label facilities would be 27,400 Mg per year in 1985, whereas emissions from those same facilities under Alternative III would only be 23,100 Mg per year, a reduction in emissions of 16 percent.

The costs of achieving these reductions in the quantity of pollutants emitted under Alternative III, on the other hand, are expected to be reasonable. The increase in product price for the industry as a result of the imposition of the standard would be less than 0.9 percent. If the increased cost were borne by the manufacturer the return on investment for the industry would be reduced by 1.0 percent or less. Neither of these increases could reasonably be considered major increases in costs to consumers or to industry. Neither could these costs or the requirements of the proposed standard be considered significant in terms of their impacts on the productivity or competitiveness of the industry, or on innovation in either production or pollution control technology.

It should be noted that States have neither equivalent standards nor standards which are in all cases as stringent as Alternative I. Thus, even if emission reductions were less than currently projected, the proposed standards would have the benefits intended by the Clean Air Act of eliminating competition between States based on varying emission standards. The proposed standards would also ensure that best technology is used on all new sources in the industry.

2.4.4 Comment: Another comment comparing Alternative I with the proposed standard was that Alternative I provided more incentive for the conversion of facilities from high-solvent to low-solvent or solventless technologies by reducing the requirements placed on new, modified, or

reconstructed facilities which convert to these innovative technologies (D-1, D-3).

Response: Because solventless technologies have no, or essentially no, emissions of VOC, these technologies will be unaffected by the adoption of the proposed standard or by the retention of the present SIP regulations under Alternative I. Therefore, the adoption of the proposed standard would have no adverse impact in the movement toward this technology by the industry.

Low-solvent technologies are treated essentially equally by the proposed standard and Alternative I. Because the proposed standard contains an emissions floor of 0.20 kg VOC/kg of coating solids, the majority of low-solvent technologies will not be required to perform any additional VOC control. No further control would be required because the level of VOC emissions from these technologies is expected to fall below this emissions floor.

Further, it was determined that economic factors outside of the operation of this proposed standard (such as high solvent costs, other regulations, and the increasing availability of low-solvent technology) made these innovative technologies sufficiently attractive that the costs of compliance with this standard would not adversely affect this conversion.

2.4.5 Comment: Four commenters stated that the economic analyses of the costs and effectiveness of the proposed standard are insufficient, particularly with reference to the impact of the regulation on small facilities (D-1, D-2, D-3, D-4).

Response: Chapter 8 of the BID contains an analysis of the costs and economic impacts of this proposed standard on the pressure sensitive tape and label industry. This analysis was thorough and detailed, examining the relevant facets of the pressure sensitive tape and label industry. The market for tape and label products was examined as well and the performance of elements of the industry during variations in that market. The costs

which would be incurred by the industry and the impact on the tape and label industry of changes in prices for materials, processes, and finished products were examined for each of three regulatory alternatives.

The economic impact of the proposed standard on the pressure sensitive tape and label industry was analyzed for small facilities specifically, as well as large and medium facilities. Further, the inflationary impacts of the proposed regulatory alternatives were computed and analyzed. As a result of these efforts, it was determined that the proposed standards could be attained at reasonable costs to all size plants in the industry and to the economy at large.

The economic analyses and the examination of the cost effectiveness of the proposed standards are necessarily representative rather than inclusive of every facility in the industry. It is the Agency's conclusion that the population of facilities reviewed and the assumptions and data used in the course of this analysis accurately reflect the economics of the industry and its operation under the standard.

2.4.6 Comment: One commenter (D-5) states that the standard should be applied to a facility only after a case-by-case analysis of the costs and benefits of the standard had been performed for each facility. Adding this flexibility to the standard, the commenter maintained, would encourage the development of low-solvent coatings.

Response: The regulatory program established by Section 111 of the Clean Air Act requires that standards be established for categories of sources which are found to contribute to air pollution, and requires the Administrator to publish a list of categories that are to be the subject of standard setting. Section 111(b)(2) allows the Administrator to establish subcategories and classes of sources for the application of the standard, but at no point does this section indicate that standards may be developed or made applicable on an individual facility basis. The various typical subcategories of the pressure sensitive tape and label industry were examined in the preparation of the standard (based on size and technology

employed) and the application of the standard to these subcategories of the industry were determined to be reasonable on a technological, economic, and environmental basis. Further, it is not expected, on the basis of this examination, that any individual plant within the industry would vary from these models to the extent that the application of the standard would be made unreasonable.

Further, the proposed standard does provide flexibility for the affected facility. This flexibility lies in the fact that the level of control required of a facility is determined by the VOC content of its coatings. According to the formula stated in the proposed standard for determining the percentage reduction of emissions required of a facility, the lower the VOC content of the coating, the lower the requirement for the reduction of those emissions. Therefore, the operator of an affected facility can exercise control over the level of control required of his facility by his choice of the types of coatings used.

2.5 AFFECTED FACILITY DEFINITION

2.5.1 Comment: In the preamble to the proposed standard, at 45 FR 86280, the Agency solicited comments from industry and other interested parties on the definition of "affected facility" contained in the proposal. Several commenters, both at the hearing and in subsequent letters, stated that the definition should be broadened from each individual coating head and accompanying drying oven to include the entire coating line from the unwinding of the web to rewind after all coating procedures have taken place.

The broadened definition would allow the emissions from several coating heads and drying ovens on the same line to be averaged together for the purposes of determining compliance. In this way, emissions from one coating head/drying oven could be above the standard if emissions at a second are sufficiently below the standard. This, according to the commenters, would encourage the development of solventless of low-solvent coatings which would be used to offset the need for add-on controls for high solvent coatings used on the same line. The commenters maintain that this approach would

offer the potential for significant cost savings and added flexibility while, not increasing emission levels above that which would be achieved under individual affected facility standards (D-6, D-8, D-12, F-1, F-2).

Response:

Upon consideration of these comments and the issues raised by the definition of affected facility contained in the proposed standard, the Administrator has determined that the definition of affected facility should be amended in the promulgated standard to encompass the entire coating line, including all individual coating heads and drying ovens on one line, from unwind to wind.

An analysis of the points raised in the comments on this issue and of new data submitted by the industry has revealed that the conclusion that the proposed narrow definition would result in greater emissions reduction is no longer supportable. These new data show that the relative cost of low-solvent technologies has changed since the BID was prepared and that new low-solvent adhesive systems are now more costly than comparable solvent-based adhesive systems which are now in use.

Consequently, the narrow definition, which has the effect of imposing the additional cost of precoat controls on new or modified lines which use low-solvent adhesive technologies, would encourage continued use of existing solvent-based adhesive facilities and discourage the construction of new low-solvent facilities. In contrast, under the broad definition, precoat facilities would not need to be controlled if the emissions from the complete line are below the standard. This results in a significant cost savings and creates an incentive for the construction of new, low-solvent adhesive facilities. New lines involving low-solvent facilities would have significantly lower emission rates than existing solvent-based lines, and equal or lower emission rates than new solvent-based lines. In view of the cost incentive for the construction of new low-solvent lines, it is reasonable to conclude that the broad definition will result in greater emission reduction than the narrow definition. Therefore, the Administrator has determined that the definition of an affected facility adopted in this

standard shall include the entire coating line, including all individual coating heads and drying ovens in one line, from unwind to wind.

2.6 REPORTING AND RECORDKEEPING

2.6.1 Comment: Several commenters (D-2, D-3, D-7, D-12) feel that the recordkeeping and reporting requirements of the proposed standards are onerous, complex, and costly in terms of the resources required. Two of the three commenters (D-7 and D-12) went on to say that the recordkeeping and reporting requirements of the proposed standards would deter the development and use of innovative low-solvent coatings because their use would bring a facility under the recordkeeping and reporting requirements of the standard.

Response: EPA has been investigating alternative ways of reducing monitoring, recordkeeping and reporting burdens on owners and operators. The goal is to reduce all recordkeeping and reporting that is not essential to ensuring proper operation and maintenance. After reviewing the requirements in the proposal, EPA determined that monitoring and compiling data are essential for both the owner or operator and EPA to ensure proper operation and maintenance, and compliance with the standard. A responsible owner or operator would need monitoring information compiled in a useable form to determine when adjustments in the control system are needed to ensure that it is performing at its intended effectiveness level. EPA is therefore requiring only the additional step of filing the information in an accessible location. Because EPA judges that monitoring and recordkeeping are essential for proper operation and maintenance, these requirements have not been changed since proposal. However, in its review of the reporting requirements EPA determined that a reduction in the number of exceedance reports required per year was warranted. Therefore, in the promulgated standard owners and operators are only required to semiannually report instances when the temperature fluctuations of an incinerator control device and the VOC emissions of an affected facility exceed the allowable levels established in the standard. The requirement to only report exceedances semiannually reflects a reduction from the proposed schedule of calendar

monthly reporting. These reporting requirements may be waived in States where the program has been delegated, if EPA, in the course of delegation, approves reporting requirements or an alternative means of facility surveillance adopted by the State. Such facilities would be required to comply with the requirements adopted by the State. The other proposed reporting requirement involving the reporting of initial and any subsequent performance test results to the Administrator has not been changed since proposal.

The Administrator does not believe that the recordkeeping and reporting requirements of the proposed standard would deter the development and use of low-solvent coating technology. The supporting rationale for the use of low-solvent coatings, presented in the response to Comment 2.7.1, would apply in this case. The use of low-solvent coatings would not, in and of itself, constitute a modification since the use of low-solvent coatings would not ordinarily result in an increase in VOC emissions, but instead in a reduction in those emissions. Such a conversion might, however, constitute a reconstruction of the facility under the definition stated in 40 CFR 60.15 if the capital costs of the conversion exceeded fifty percent of the capital costs of a new facility.

Under the reconstruction provisions of the regulation, the Administrator makes a case-by-case determination as to whether an alteration to a facility constitutes a reconstruction for the purposes of the standard. Among the factors in this decision are the extent to which the components being replaced cause or contribute to the emissions from the facility, and the economic obstructions to compliance inherent in the proposed change in the plant.

2.6.2 Comment: One of the comment letters (D-7) stated that affected coating lines using low-solvent or totally solvent-free coatings should be exempt from all sections of the proposed standards, including the recordkeeping and reporting requirements. The commenter felt that mandatory compliance with the proposed standards, for these types of coatings, would be unnecessary and irrelevant.

Response: All coatings with a VOC content less than 0.20 kg VOC/kg of coating solids would essentially be exempt from all requirements of the proposed standards except those involving recordkeeping of coating use. The Administrator must have some mechanism by which he can determine when an affected facility uses a compliance coating. For EPA to make this determination the affected facility must keep records of what types of coatings are used. Based on the Administrator's knowledge of the use of low-solvent coatings, the inability to consistently run all products using low-solvent coatings forces a coater to switch a line back and forth between solvent-based and low-solvent coatings. Without adequate recordkeeping of the use of low-solvent coatings neither the Administrator nor the affected facility would ever know when the affected facility was subject to the emission limits of the proposed standard.

As stated in the response to comment 2.6.1, only the reporting of performance test results and exceedances will be required in the final regulation. Once the performance test is passed, it is highly unlikely that coaters using low-solvent coatings will ever have to report anything to EPA.

2.7 SMALL SOLVENT USE EXEMPTION

2.7.1 Comment: One of the comment letters (D-5) stated that small PSTL production sources should be exempted from compliance with the proposed standard. The commenter felt that the 15 megagram per year exemption limit in the proposed standard is unreasonably stringent and should be modified to exempt small production sources. The commenter went on to state that small sources should be exempted from the proposed standard because: small sources contribute a "de minimis" portion to the total industry VOC emissions, the cost for emission control devices is unreasonable for small sources compared to potential benefits, and it would encourage the development of low-solvent type coatings.

To support the "de minimis" argument for an exemption, the commenter referenced two sources of information which discuss VOC emissions and the percentage of emissions which each facility size contributes. One of the referenced sources was an article in the August 1979 issue of Paper, Film, and Foil Converter. This article contained a summary of a study which was

done on VOC emissions from the flexographic printing industry. This study concluded that facilities with VOC emissions less than 250 tons per year emit less than 7.6 percent of the total VOC emissions from the flexographic printing industry. The comment letter (D-5) stated that all conclusions made in this study concerning the flexographic printing industry are equally valid for the PSTL industry.

The second source of support for the "de minimis" argument is data which the commenter states were compiled by the Association of Industrial Metalizers, Coaters, and Laminators (AIMCAL). These data show that two percent of total PSTL industry VOC emissions are contributed by facilites with VOC emissions less than 250 tons per year.

Response: The Administrator does not believe that the "de minimis" argument is a valid rationale for exempting small sources. If it is technically and economically feasible for small production sources to be controlled, the Clean Air Act requires that they be controlled. In addition, it is the Administrator's view that a small source exemption (or the lack of one) from the proposed standard will not be a determining factor in whether affected facilities will change a product over to low-solvent or solventless technology. Based on currently available information, the Administrator believes that when sufficient technical and economic incentives exist to induce changeovers to low-solvent or solventless technologies, the change will be made regardless of the existence (or nonexistence) of an exemption.

However, the Agency has reanalyzed the cost effectiveness (i.e., the cost of VOC emissions control relative to the emission reduction which is achieved by such controls) over the range of line sizes found in this industry. For each type of line, annualized control costs were calculated and compared to the emission reductions which would occur if potential, uncontrolled emissions are reduced to the level of the standard. This analysis showed that the cost effectiveness of controls is primarily a function of the quantity of solvent used, and that the parameters are inversely related. That is, as solvent use (and therefore potential

emissions) increases, the cost effectiveness decreases. It should be noted that this cost curve does not necessarily represent the actual amounts of money that will be spent to install and operate VOC controls for any particular coating line. Rather, the costs are estimates which are representative of facilities likely to be built. The costs for a VOC control system will vary according to coating line size, system airflow rate, solvent loading level, the lower explosive limit levels maintained in the oven, the degree of solvent or heat recovery practiced, and other factors. However, the cost curve provides a useful guide for judging the reasonableness of requiring VOC controls at different potential VOC emission levels.

In the past, the maximum estimated cost per megagram of pollutant material removed (VOC, particulate matter, SO_2) has ranged from somewhat less than $1,000 to $2,000. This package has a maximum estimated cost per megagram of $2,000. In prior source categories for which NSPS have been developed, VOC maximum estimated control costs have generally not exceeded $1,000 per megagram. In this case, because of the "worst case" character of the cost calculations, EPA believes the proposed standards are reasonable.

The maximum estimated cost in this package will not be viewed as a precedent for future actions. Instead, in the future, we will continue to evaluate each package on an individual basis.

The cost curve for the application of VOC controls to coating lines shows that the potential cost per Mg of VOC controlled is greater than $2000 for input solvent levels of about 45 Mg (50 tons) per year or less. Therefore, in the promulgated standard, coating lines which input to the coating process 45 Mg (50 tons) per 12 month period or less of VOC will not be subject to the standard's emission limits. These lines will, however, be subject to all applicable recordkeeping and reporting requirements given in the standard.

2.8 LEVEL OF PROPOSED STANDARD

2.8.1 Comment: One commenter (D-5) stated that the 90 percent reduction of VOC emissions in the proposed standard seemed to be an arbitrary figure.

Response: The Administrator's choice of the 90 percent overall VOC emission reduction was not an arbitrary one. The 90 percent reduction level was selected because it represents the highest VOC emission reduction reasonably achievable by plants using the best demonstrated VOC emission control system. In determining the 90 percent control level and the best demonstrated control system, environmental, energy, and economic impacts were considered. Chapters 7 and 8 of the background information document examine these three impacts.

The basis for the proposed 90 percent overall VOC emission reduction is explained in the preamble to the proposed standard (45 FR 86281). The analyses presented in the preamble contain an examination of two aspects of emission control, capture system efficiency and control device efficiency. In the proposed standard overall VOC emission reduction efficiency is defined as control device efficiency times capture system efficiency. The commenter's letter seemed to indicate some degree of misunderstanding on how capture, control device, and overall control efficiency were defined and how these concepts were combined to determine the 90 percent control level. A capture efficiency and a control device efficiency of 95 percent each were determined to be reasonable after studying the VOC control systems of well-controlled existing tape and label facilities. The product of these efficiencies (0.95 x 0.95) is 90 percent overall control.

Data on well-controlled tape and label facilities indicate that overall VOC emission reductions as high as 93 percent are achievable. However, the Administrator does not believe that 93 percent overall control is a reasonable emission reduction level that could be achieved continually over a long term period. The Administrator does believe that 90 percent overall emission control represents the control level achievable on a continual basis by the best demonstrated system of emission reduction.

2.8.2 Comment: One commenter (D-6) stated that the oven exhaust air turndown ratio of 10 to 1, discussed in the BID, was not achievable. Turndown ratio refers to the degree by which oven exhaust air can be reduced from design exhaust levels in response to reduced solvent loadings. The

commenter felt that the best achievable ratio was 4 to 1. The inability to turndown the oven exhaust sufficiently would result in higher air volumes than necessary for a certain quantity of solvent. The excess air causes reduced VOC concentrations to be sent to the control device and consequently the control device has a lower reduction efficiency. According to the commenter, this problem is the most difficult when coating lines are operated at slow line speeds (40 feet per minute). The commenter recommended a reduction in the level of the proposed standards from 90 to 85 percent overall VOC control citing the inability to achieve a 10 to 1 turndown ratio as the reason for the decreased control efficiency achievable.

The commenter was contacted by telephone (E-8, E-9) to clarify the reasons for the low turndown ratio. Several reasons were given: (1) oven air balancing problems due to leaks in seals and other oven equipment, (2) minimum air flows required to keep ovens at negative pressure to prevent solvent leakage back into the coating room, (3) limited ability to close dampers due to insurance regulations, and (4) additional combustion air required in ovens with natural gas burners.

The commenter noted that his company had purchased a coating system from the equipment vendor referenced in the BID (EPA-450/3-80-003a, p. 4-23, reference 23) who stated that a 10 to 1 ratio was achievable. However, the purchased system has never achieved a turndown ratio greater than 4 to 1.

Response: The turndown ratio reported in the BID was determined by contacting drying oven equipment vendors serving the PSTL industry. These contacts indicated that turndown ratios of 10 to 1 were possible. The BID clearly references the source of the 10 to 1 ratio statements.

As a result of this comment, the vendor contact referenced in the BID, that quoted the 10 to 1 turndown ratios, was recontacted (E-7) in order to verify that such turndown ratios are achievable. The vendor reported that 10 to 1 ratios (and even 15 and 20 to 1) are achievable with oven exhaust air flows. However, he did indicate that several operating conditions may be present in a coating system that prohibit the turndown from exceeding 4 to 1. The primary conditions mentioned were frequent or excessive system

leakage problems, insurance regulations limiting the degree of damper closure, and the minimum flow requirements needed to keep solvent vapors from flowing out of the oven into the coating room. These reasons are noticeably similar to those given by the commenter in his explanation of why low turndown occurs. The vendor stated that the problems and conditions mentioned by the commenter (D-6) could effectively make 4 to 1 the highest turndown achievable for that particular system. He emphasized that the determination of turndown ratios was very case-specific and depended heavily on the complexity of the coating line.

The effect of turndown ratios on control efficiencies was analyzed by EPA during the development of the proposed standards. Generally, the technical points made by the commenter are valid (especially for his particular facility). However, it is the Administrator's position that a new coating line, designed and operated properly, with the best system of control, can achieve the level of the proposed standard even with a 4 to 1 turndown.

A plant trip was made to the commenter's facility during the development of the proposed standards. It was learned that lower levels of solvent are being applied than the plant was optimally designed for. This non-optimum design results in excess air flows and low LEL levels. High turndown would be difficult to achieve with this overdesign condition.

An examination of the commenter's emission reduction calculations at a 4 to 1 ratio indicates that the efficiency of the control device and the overall VOC control efficiency would meet the levels of the proposed standard if the control equipment was operated at its optimum capability. The commenter indicated that a low LEL (8% or 960 ppm) gas stream would exist in the inlet to the control device. The VOC in this stream would be reduced to an outlet concentration of 120 ppm which would be indicative of a control device efficiency of 87.5 percent. However, a closer study of the commenter's data revealed some apparent inaccuracies. First, the 8 percent LEL figure on the control device inlet stream should be 12.2 percent to be consistent with other data presented in the comment. A 12.2 percent LEL

equals an inlet concentration of 1464 ppm. If the outlet concentration remained at 120 ppm, a control device efficiency of 91.8 percent would be indicated. Secondly, after contacting the commenter (E-9), it appears that the reported outlet concentration of 120 ppm is misleading and is not representative of best technology. The commenter indicated on the telephone that the 120 ppm figure is the automatic setpoint at which his carbon beds start steam regeneration and, therefore, is the maximum outlet concentration. The average VOC outlet concentration would have to be significantly lower than the 120 ppm value. Therefore, by correctly calculating the control device efficiency by using the average VOC outlet concentration (estimated at 65 ppm) and not the breakthrough setpoint concentration, an efficiency of 95 percent could be obtained. The Administrator believes that the commenter's control device efficiency of 87.5 percent is not representative of the best system of continuous emission reduction, which requires that the emission control device achieve 95 percent efficiency over a month. Further contact with the commenter (E-9) indicated that the carbon adsorber was not being operated at its peak control efficiency.

Data developed during the tape and label NSPS study show that even though lines may run at slow speeds and have consistently low LEL (10% and less) gas streams going to a control device, high reduction efficiencies can be achieved. EPA has presented data in BID-Volume I which show a PSTL facility operating small lines (28 inch width) at an average line speed of about 45 feet per minute and an LEL level less than ten percent. This facility achieved a 93 percent overall emission reduction (over a four week period) and a carbon adsorber operating efficiency of approximately 97 percent. Based on the favorable experiences of other coaters with conditions similar to those of the commenter, the Administrator believes that the problem of limited turndown ratio can be solved to the extent that affected facilities would be able to comply with the proposed standards.

2.8.3 Comment: One commenter (D-6) believed that the proposed mass emission limit of 0.20 kg VOC/kg of coating solids applied should be raised to 0.25 kg VOC/kg of coating solids applied. The commenter was contacted by

telephone (E-8) to better understand the reasons for the requested change in the standard. Although not providing any definite technical support for the change, the commenter believed that a limit of 0.25 kg VOC/kg coating solids would provide more flexibility and more incentive to coaters to use low-solvent (emulsion) coatings.

Response: During the development of the proposed standards, the EPA studied several types of low-solvent coatings. Several of these coatings were examined and tested and each met the proposed 0.20 level. The Administrator believes that the 0.20 kg VOC/kg coating solids level achieves emission reductions comparable to those of solvent-based systems required to achieve 90 percent overall control. The 0.25 kg VOC/kg of coating solids level achieves only an 87.5 percent reduction when compared to that required from the average solvent-based facility. The Administrator has determined that emission reductions down to 0.20 kg VOC/kg coating solids are reasonable considering economic and energy requirements. The commenter presented no definitive information contradicting this determination.

Though some individual low-solvent coatings may not, by and of themselves, achieve the 0.20 kg limit, such coatings would still be useful in PSTL applications. When used on a line with other low-solvent coatings over a month time period, coatings in the 0.25 kg VOC range would help keep the monthly compliance average below 0.20. When used on a line with other solvent-based coatings over a month time period, coatings in the 0.25 kg VOC range would significantly reduce the required level of control for the line.

During the first public comment session on December 13, 1979 at National Air Pollution Control Techniques Advisory Committee (NAPCTAC) meeting, the largest manufacturer in the PSTL industry stated that the 0.20 kg VOC/kg coating solids level was reasonable.

2.9 NSPS AND SIP COORDINATION

2.9.1 Comment: Two commenters suggested that the implementation of the new source standards for the pressure sensitive tape and label industry be delayed for five to ten years in order to determine the benefits to be

derived from the newly recommended limit for SIPs of 2.9 pounds of VOC for every gallon of applied coating (D-6, D-12).

Response: The projected impact that the requirements of the SIP regulations will have on emissions from pressure sensitive tape and label facilities has been included in the analyses that led to the development of this proposed standard. These regulations form the baseline against which the regulatory alternatives have been compared. The costs and benefits of continued operation under the SIP regulations alone have been calculated, as well as the expected reduction in pollutant emissions under the SIPs. The outcome of the comparison of these regulations to the proposed standard is the Administrator's determination that the proposed standard is based on the application of the best demonstrated system of control technology, considering costs, nonair quality health and environmental impacts, and energy requirements. Further delay in the adoption of this standard in order to determine the effects of the SIP regulations is not necessary, since these effects have already been considered by the Administrator and constitute a major portion of the analysis that supports the proposed regulation.

2.9.2 Comment: Two commenters (D-2 and D-12) thougnt that there were conflicts between the requirements of the proposed standard and some SIP regulations. In particular, there are conflicts between the units of the proposed standard (kg VOC/kg coating solids) and the units of many SIP's (pounds/gallon of coating minus water). The commenters felt this conflict put affected facilities in a position of having to choose between compliance with conflicting regulations.

Response: EPA developed the mass/mass format of the standard to clear up some of the problems that PSTL companies had encountered in interpreting and implementing the mass/volume SIP's. Contacts and discussions with the industry during the development of the proposed standard indicated that a mass/mass format was familiar to and extensively used throughout the PSTL

industry. The mass/mass format is much simpler to understand and generally can be determined from typical coating formulation data. Although expressed in the proposed standard as kg VOC/kg coating solids, the format of the emission limit is not designed to be in metric units as one commenter (D-12) noted. The proposed emission limit is simply a ratio of the mass of VOC to the mass of coating solids. The units of the ratio are irrelevant.

Affected facilities will not be put in the position of having to choose between compliance with conflicting regulations. Firms will always have to comply with the most stringent applicable regulation be it SIP or NSPS. The EPA expects that most States will be delegated the authority to enforce the NSPS, thus further reducing any possible conflict.